

REMARKS

The Office Action dated February 27, 2006 has been reviewed. Reconsideration of the grounds of rejection of claims 67-69 is respectfully requested in view of the remarks herein. In addition, claim 70 has been added. Support for this claim is found in the Specification at page 6, paragraphs 71-75, page 7, paragraphs 81-83 and elsewhere. No new matter has been added. Applicant respectfully submits that pending claims 67-70 are allowable.

SUMMARY OF THE OFFICE ACTION

Claim Rejections – 35 U.S.C. § 103(a)

Claim 67 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Swicegood (the Kitchen Physician) in view of Cooper et al (U.S.P.N. 6,379,720) and further in view of Kobayashi et al (U.S.P.N. 4,909,986). Claim 68 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Swicegood (the Kitchen Physician) in view of Cooper et al (U.S.P.N. 6,379,720). Claim 69 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Nelson et al (U.S.P.N. 4,490,389) in view of Kobayashi et al (U.S.P.N. 4,909,986).

According to the Office Action, Swicegood allegedly discloses an aqueous composition having grapefruit seed extract in glycerin. Swicegood fails to disclose or suggest, however, the use of copper metal, much less the claimed concentration ranges. Cooper et al. is allegedly directed to a disinfecting system including hops extract and copper sulfate. Kobayashi et al. allegedly teaches including a preservative in a deodorizing composition. Finally, Nelson et al. allegedly teaches a disinfecting solution which includes copper and glycerin.

For at least the reasons set forth below, applicant asserts that 1) even if the references were to be combined in the manner suggested by the Office, the combination fails to suggest or disclose the claimed invention, and 2) the Office has failed to set forth a proper prima facie case of obviousness of the claims.

Claim Rejections Under 35 U.S.C. § 103 Should Be Withdrawn

For at least the reasons set forth below, even if the references were to be combined in the manner suggested by the Office, the combination fails to suggest or disclose the claimed invention. Furthermore, applicant respectfully submits that the Office has failed to set forth a proper prima facie case of obviousness of the claims 67, 68 and 69. Accordingly, applicant respectfully requests that the rejections under 35 U.S.C. § 103 be withdrawn.

I. **Even if Combined in the Manner Suggested, the Combination of References Fails to Provide Each and Every Limitation of the Claimed Invention**

Applicant asserts that in order to show obviousness of a claimed invention, it is well established that the prior art reference (or references when combined) must teach or suggest all the claim limitations, see, e.g., MPEP § 2142. Here, the Office has not given due weight to (1) the explicit claim limitations, as well as (2) how the invention is claimed as a whole.

Claims 67, 68, and 70 specifically recite:

“no more than 110 milligrams of grapefruit seed extract dissolved per liter of fluid”

As noted above, Swicegood fails to disclose the claimed concentration of grapefruit seed extract. Further, Cooper does not disclose or suggest the use of grapefruit seed extract at all; instead, Cooper uses hops extract. The concentrations the Office cites from Cooper specifically are for hops extract, and Cooper makes no mention of substituting grapefruit seed extract for the hops extract.

Because the resultant combination fails, either expressly or under principles of inherency, to teach the claimed concentration of grapefruit seed extract as set forth above, and because grapefruit seed extract includes constituents that are different than those contained in hops, as explained below, it is clear that the combination of elements of Swicegood and Cooper (and Kobayashi for claim 67) do not result in the claimed invention. To the extent the Office contends that Cooper is used solely to show a specific concentration range, applicant addresses that point below in Part II.

Furthermore, with respect to new claim 70, in addition to failing to teach the presence of the claimed amount of grapefruit seed extract, none of the cited references teach a combination of copper and silver, or a combination of copper and silver at the claimed range. In fact, neither Swicegood, Cooper et al., Kobayashi et al. nor Nelson disclose or even suggest the use of silver at all. As described in the application as filed at least at paragraphs 81 through 83, the combination of silver and copper provides a substantially improved, synergistic disinfection capability as compared to any of the constituents alone or in partial combination.

Accordingly, because the references (either alone or in combination) fail to provide each and every claim limitation, applicant submits that the rejections of claims 67 and 68 have been overcome, and claim 70 is in condition for allowance in view of the cited references, including those from earlier rejections, and applicant respectfully requests withdrawal of the rejections.

II. The Office Has Not Established a Prima Facie Case of Obviousness of the Claims

Assuming for the sake of argument that, even if combined, the references disclose or suggest each and every claim feature, applicant submits that the Office has not shown any suggestion, teaching or motivation that would lead a person of ordinary skill in the art to combine the relevant art teachings in the manner claimed.

Courts have repeatedly explained that an examiner must show an unrebutted prima facie case of obviousness. However, an applicant can overcome a rejection by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.

A mere statement that modifications of the prior art to arrive at the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the

teachings of the references. Here, the Office has not provided an objective reason to combine the teachings of the references.

With respect to claims 67 and 68, the Office provides no explanation as to why one would modify the concentration of **grapefruit seed extract** in the Swicegood reference based on the amount of **hops extract** used in Cooper. Cooper defines "hops extract" as extracts which are primarily composed of beta acids, but which may also contain alpha acids. Applicant respectfully asserts that grapefruit seed extract does not fall within this definition of hops extract. This is particularly true when one considers the fact that hops and grapefruit seed extracts differ not only in types of constituents, but also in the concentration of each constituent. It would not be obvious to one ordinarily skilled in the art to apply or even suggest that grapefruit seed extract exhibits the properties of hop extracts considering that the two substances are dramatically different taxonomically. Hops taxonomy is of the Subclass Hamamelidae of the Order Urticales of the Family Cannabaceae – hemp of the Genus *Humulus* L. – hop, which is very different taxonomically from grapefruit seed extract which comes from *Citrus Grandis*. The taxonomy of grapefruit seed extract is of the Subclass Rosidae of the Order Sapindales of the Family Rutaceae – rue, rutacées of the Genus *Citrus* L. – citrus. The Examiner gives no evidence or scientifically motivated rationale as to why a person of ordinary skill in the art would substitute hops extract with a taxonomically distinct plant extract such as grapefruit seed extract. There simply is no motivation to do so in the prior art.

Therefore, no motivation exists to modify the concentration of grapefruit seed extract based on Cooper's disclosed concentrations of hops extract, because one of skill in the art would not make such a modification without reference to the constituents.

Even if grapefruit seed extract and hops extract are considered similar compositions, e.g., in that they are both plant extracts, the Office still provides no objective evidence of motivation or suggestion to substitute one for the other or to combine the references. Instead, the Office states that it would be obvious to modify the concentration of grapefruit seed extract in view of the hops extract concentration in

Cooper because "plant extracts at such a concentration range are effective in controlling biological fouling." However, the lines from Cooper to which the Office cites (Cooper reference, col.3, lines 31-33) do not support the general statement that the concentration ranges used for the hops extract would be useful for all plant extracts. Rather, the statement in Cooper is limited to the concentration of hops extract; the Office's attempt to broaden the statement to cover all plant extracts, and specifically grapefruit seed extract, is not supported by the Cooper reference and does not provide evidence of a motivation or suggestion to combine the references.

At best, the basis for asserting the combination has come from a hindsight reconstruction of the claimed invention using applicant's disclosure as a blueprint. Although the MPEP at § 2145 indicates that "[a]ny judgement on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning," here it is clear that the Office has engaged in *impermissible* hindsight and has improperly used applicant's non-limiting disclosure and examples as a blueprint, and included knowledge gleaned only from applicant's disclosure as a basis of the rejection. This is because in the absence of applicant's disclosure, a person of ordinary skill in the art would have had no motivation to combine the prior art teachings, much less a motivation to combine the prior art teachings in the particular manner claimed for all the reasons described hereinabove.

Similarly, with respect to claim 69, the Office fails to identify in the cited reference any motivation or suggestion to add glycerin at a specific concentration. Instead, the Office asserts the end result of adding the glycerin at a specific concentration as the reason why it would have been obvious to do so – specifically, the Office Action reads, "since at such a concentration value, glycerin acts as an antiseptic agent that leads to the additional destruction of microorganisms in combination with the disinfecting copper compound." This statement does not point to or provide any objective evidence of a motivation or suggestion to combine the references. In fact, the Office's conclusion is clearly based on hindsight in view of applicant's disclosure since the Office merely states the results of adding the specific

concentration of glycerin to a disinfecting composition (i.e., the control of biological fouling), rather than providing evidence that it would have been obvious to do so.

Similarly, an obviousness rejection may be overcome by evidence being given of the applicant's invention's superiority of a property shared with the prior art. MPEP 716.02(a). Applicant has provided throughout the application (see, e.g., p. 18 line 29 – p. 19 line 3) comprehensive data of his experimentation of the invention. Collectively, this evidence is more than sufficient “[e]vidence of unobvious or unexpected advantageous properties, such as superiority in a property the claimed compound shares with the prior art, [which] can rebut prima facie obviousness. ‘Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a prima facie case of obviousness.’” *Id.* (citing *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987)).

Despite the fact that there are “[n]o set number of examples of superiority . . . required” *In re Chupp*, 816 F.2d 646, 2 USPQ2d 1439 (Evidence showing that that claimed herbicidal compound was more effective than the closest prior art compound in controlling quackgrass and yellow nutsedge weeds in corn and soybean crops was sufficient to overcome the rejection under 35 U.S.C. 103, even though the specification indicated the claimed compound was an average performer on crops other than corn and soybean), the applicant has cited examples in hard data from laboratory experiments. *See also Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990) (unexpected superior therapeutic activity of claimed compound against anaerobic bacteria was sufficient to rebut prima facie obviousness even though there was no evidence that the compound was effective against all bacteria).

Accordingly, because the Office has failed to provide a prima facie case of obviousness, applicant respectfully requests withdrawal of the rejection to claims 67, 68, and 69.

As amended above this Application now has four (4) independent claims. The additional claim over three (3) does require the payment of a fee. The applicant directs the Examiner to the Fee Worksheet (PTO 875) dated July 12, 2005, which indicates that the applicant has previously submitted fees sufficient

to cover three (3) additional independent claims. Therefore, since there is only one (1) independent claim in excess of three, there is no additional fee due with this submission.

CONCLUSION

Applicant respectfully submits that the pending claims 67-70 are in a condition for allowance. Specifically, the rejections of the claims under 35 U.S.C. § 103(a) have been addressed, and applicant submits that new claim 70 is allowable over the prior art. Reconsideration and allowance of these claims is respectfully requested at the earliest possible date.

Respectfully submitted,

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Date

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